

ABSTRACT

An organic optoelectronic device is provided which comprises a multi-layer structure and a substrate. The multi-layer structure is comprised of a first electrode layer, a second electrode layer, and at least one organic photoelectric layer. The organic photoelectric layer is an anisotropically absorbing and electrically conducting layer and comprised of rodlike supramolecules which comprise at least one polycyclic organic compound with a conjugated π -system, has a globally ordered crystal structure with an intermolecular spacing of 3.4 ± 0.3 Å along a polarization axis of the organic photoelectric layer, and absorbs electromagnetic radiation in a predetermined spectral subrange of approximately 200 to 3000 nm. The multi-layer structure is formed on one side of the substrate. At least one of the first and second electrodes is transparent for the electromagnetic radiation to which the optoelectronic device is sensitive.